

Attachment: Illustration of Non-Concurrent Supply of Impurities & Concurrent Supply of Impurities

FIG. A: Technique according to the present invention

1. Ga and Mg are supplied (Ga atom layer is in several layers, Mg is in doping level).

Mg atoms are deposited in Ga atoms under a condition that positions thereof are fixed (The positions of Mg atoms are settled).

2. When Si is scattered, Si repels Ga, so that Mg and Si are arrayed side-by-side.

3. NH_3 is flowed on the resulting layers to nitride them, whereby semiconductor crystallization is effected.



Doped with Mg and Si side-by-side.

Non-concurrent supply of Mg and Si = Molecular doping is possible

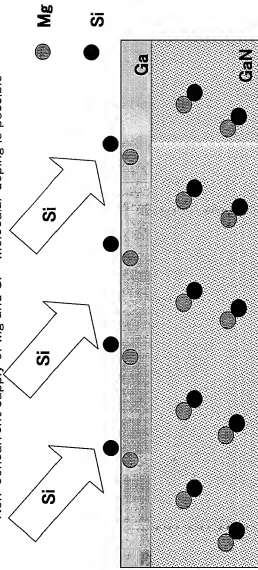


FIG. B: Technique according to Kobayashi

1. Ga is deposited (Ga atom layer is in several layers).

2. Si is supplied concurrently with Mg. Si and Mg are not arrayed side-by-side, but they are situated discretely.

3. NH_3 is flowed on the resulting layers to nitride them, whereby semiconductor crystallization is effected.



Doped with Mg and Si discretely.

Concurrent supply of Mg and Si = Molecular doping is impossible

